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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,434	04/26/2001	Makoto Kobayashi	109352	7153

25944 7590 11/21/2003

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EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,434

Applicant(s)

KOBAYASHI ET AL.

Examiner

Hadi Shakeri

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-13, 17, 18, 20, 21 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-13, 17, 18, 20, 21 and 27-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-13, 17, 18, 20, 21 and 27-30 are rejected under 35 U.S.C. 103(a) as obvious over Applicant's Admitted Prior Art (AAPA) in view of Cercone et al.

AAPA discloses all the limitations of the above claims (pages 1-7), e.g., page 4, soft polishing pads used for mirror finish comprising a base layer of nonwoven fabric and a resin surface layer with wear resistance such as polyurethane, except for the polishing pad to have a content of residue zinc (or ZnO) of 2 ppm or less.



Cercone et al. discloses in col. 1, lines 25-45, that scrubbing devices, i.e., conventional sponges have closed pores that trap residue and trace amounts of metals and as the sponge wears these metals in addition to tiny fibrils formed during cross-linking and particulate residue in the material can damage the surfaces that are to be cleaned, such as semiconductor devices and teaches an extraction process to purify conventional sponges, such as rollers or pads, to the extent necessary for "ultimate cleaning" of semiconductor wafers and the like. It further discloses that the material used in cleaning and polishing rolls, Fig. 5, i.e., a typical sponge suffers from these problems.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the pads as admitted by Applicant used for polishing a semiconductor wafer in a mirror polishing process by the extraction and purification processes as taught by Cerccone et al. to reduce or eliminate metal residue, such as zinc, in preventing damaging the workpiece, specially silicon wafers.

Response to Arguments

1. Applicant's arguments filed 10/17/03 have been fully considered but they are not persuasive. Applicant fails to indicate what structure and material the pad of Cerccone does not meet with regards to the polishing pad as claimed. Cerccone discloses that particulate metal residues such as zinc may damage the wafer surface in a scrubbing or cleaning pad, it further discloses that conventional sponges used for cleaning and polishing, col. 3, line 11, use material containing fibrils that damage the workpiece, therefore the teaching to eliminate these problems clearly applies to both cleaning and polishing processes, further it is noted that except for claims 27-30 wherein a method for polishing a wafer is recited, the intended use as recited for the pad, not resulting in a structural limitations does not further limit the pad. The argument that the present inventors found that minute polishing damages could only be caused by zinc oxide added in the manufacturing, it is noted again that Cerccone teaches eliminating zinc residue in the pad manufacturing process so that the damages caused to the wafer surfaces are reduced, thus application of these finding to the mirror finish process as admitted by prior art meets the limitations.

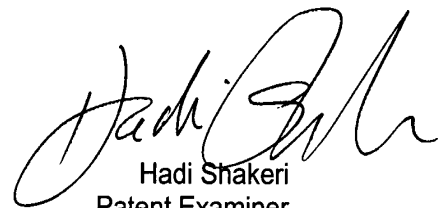
Conclusion

3. Prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Andros, Frost et al., McAvoy et al. and Kalbow are cited to show related inventions.

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4. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM. All official documents may be faxed to (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.



Hadi Shakeri
Patent Examiner
November 14, 2003